CPC COOPERATIVE PATENT CLASSIFICATION

F22G SUPERHEATING OF STEAM (steam separating arrangements in boilers F22B 37/26)

Guide heading:

F22G 1/00 **Steam superheating characterised by heating method** (exothermal chemical reactions not involving a supply of free oxygen gas, apparatus or devices for using the heat therefrom F24J)

F22G 1/005 . {the heat being supplied by steam }

F22G 1/02 . with heat supply by hot flue gases from the furnace of the steam boiler

F22G 1/04 . . by diverting flow or hot flue gases to separate superheaters operating in reheating cycle, e.g. for reheating steam between a high-pressure turbine stage and an intermediate turbine stage

F22G 1/06 . with heat supply predominantly by radiation

F22G 1/08 . . from heated brickwork or the like

F22G 1/10 . with provision for superheating by throttling

F22G 1/12 . by mixing steam with furnace gases or other combustion products

F22G 1/14 . using heat generated by chemical reactions

F22G 1/16 . by using a separate heat source independent from heat supply of the steam boiler, e.g. by electricity, by auxiliary combustion of fuel oil

F22G 1/165 . . {by electricity (steam generation in boilers heated electrically, in general, F22B 1/28) }

F22G 3/00 **Steam superheaters characterised by constructional features**
Details of component parts thereof (general aspects of enclosed heat-exchangers F28D)

F22G 3/001 . {Steam tube arrangements not dependent of location (characterised by location F22G 7/00) }

F22G 3/002 . . {with helical steam tubes }

F22G 3/003 . {Superheater drain arrangements }

F22G 3/004 . {Steam tubes with steam flowing in opposite directions in one pipe, e.g. Field tubes (F22G 3/005 takes precedence) }

F22G 3/005 . {Annular steam tubes, i.e. the steam being heated between concentric tubes with the heating fluid flowing in inner and around outer tube }

F22G 3/006 . {Steam superheaters with heating tubes (F22G 3/005 takes precedence) }

F22G 3/007 . {Headers; Collectors, e.g. for mixing }

F22G 3/008 . {Protection of superheater elements, e.g. cooling superheater tubes during starting-up periods, water tube screens }

F22G 3/009 . {Connecting or sealing of superheater or reheater tubes with collectors or distributors }

F22G 5/00 **Controlling superheat temperature** (control systems for steam boilers F22B ; regulating or controlling in general G05)

F22G 5/02 . Applications of combustion-control devices, e.g. tangetial-firing burners, tilting burners

F22G 5/04 . by regulating flue gas flow, e.g. by proportioning or diverting

F22G 5/06 . by recirculating flue gases

F22G 5/08 . . preventing furnace gas backflow through recirculating fan

F22G 5/10 . by displacing superheater sections

F22G 5/12 . by attemperating the superheated steam, e.g. by injected water sprays (spray mixers B01F 5/18)

F22G 5/123 . . {Water injection apparatus }

F22G 5/126 . . . {in combination with steam-pressure reducing valves }

F22G 5/14 . . by live steam

F22G 5/16 . by indirectly cooling or heating the superheated steam in auxiliary enclosed heat-exchanger

F22G 5/18 . by by-passing steam around superheater sections

F22G 5/20 . by combined controlling procedures

F22G 7/00 **Steam superheaters characterised by location, arrangement, or disposition**

F22G 7/005 . {for locomotive boilers (F22G 7/065, F22G 7/105 take precedence) }

F22G 7/02 . in fire tubes

F22G 7/04 . in jackets around fire tubes

F22G 7/06 . in furnace tubes

F22G 7/065 . . {for locomotive boilers }

F22G 7/08 . in fire-boxes

F22G 7/10 . in smoke-boxes

F22G 7/105 . . {for locomotive boilers }

F22G 7/12 . in flues

F22G 7/14 . in water-tube boilers, e.g. between banks of water tubes

F22G 7/145 . . { of inclined type, i.e. the water-tube sets being inclined with respect to the horizontal plane }